This response fully addresses the Examiner's rejection. Accordingly, the present application is in condition for allowance. Favorable consideration of all pending claims is therefore respectfully requested.

Applicants, through the undersigned wish to thank Examiner Menon for issuing the referenced corrected Official Action inasmuch as the Office apparently inadvertently failed to give the Applicants the benefit of an earlier priority date (July 13, 1999) in a first Office Action dated July 3, 2002.

Claims 1-10 have been rejected under 35 U.S.C. §103(a) as allegedly unpatentable over the '994 patent in view of Chromecek. The Examiner has apparently conceded novelty of the pending claims but alleges that the '994 patent discloses a process for separating essential oils comprising steam distillation to produce a mixture containing essential oils and water, contacting with divinyl benzene polystyrene adsorbent or activated carbon and then desorbing the essential oils. The Examiner admits that the '994 patent fails to address the recycling step (iii) of the instant invention. The Examiner alleges that it would be "obvious to one of ordinary skill in the art at the time of the invention to recycle the water used in the process".

The Examiner further admits that the '994 patent is silent regarding chromatography, as in claim 8, and does not teach separating Orris oil to myristic acid and irone as in claim 9 of the instant application. The Examiner contends that Chromecek employs adsorbent media for essential oils including Orris and rosemary oils and that it would have been obvious based on Chromecek to make a chromatographic column to separate essential oils and fractionate the essential oils from Orris to its components using the process of the '994 patent.

Applicants respectfully submit that the cited references fail to suggest the claimed invention. At the outset, Applicants observe that certain prior art was made of record and not relied

upon: Mastelic et al. Kem Ind., 30(5):249-252 (19821); and Machale et al., (1997) J. Chem. Tech. Biotechnol. 69:362-366 were both cited in the International Written Opinion (copy enclosed as Exhibit A) together with two further references identified on Applicants' 1449 form i.e. XP-002152637 and XP-002152639. Applicants note that the Examiner initially included Chromecek (U.S. Patent No. 4,962,133) as "not relied upon" on page 4 of the July 3, 2002 Official Action (withdrawn). Applicants note the inconsistency in the Examiner's position inasmuch as Chromecek is now applied together with the '994 patent in the rejection of claims 1-10. With the exception of Chromecek, which Applicants contend is inapplicable to the claimed invention, all of the references cited in the Written Opinion (all in the name of different owners) disclose a process which generally includes steps (i), (ii) and (iv) but fail to disclose or suggest step (iii) of the claimed invention. It is submitted therefore that the prior art spans many years, yet fails to recognize the step of recycling the hydrophilic phase. Thus, the present invention clearly satisfies a long felt need for a recycling step which heretofore remained undiscovered. This basis alone overcomes the rejection under 35 U.S.C. §103(a).

The '994 patent is merely concerned with a device for isolating the essential oil from an earlier formed aqueous mixture including an essential oil. The '994 patent discloses a process for separating an essential oil (e.g. hinokitiol) from an aqueous solution resulting from the distillation of various plants (e.g. hiba wood). This is apparently accomplished by applying the aqueous solution to a column filled with an adsorbent for the essential oil until such time as an increase in the concentration of the essential oil is detected in the discharge from the column. The adsorbent is then treated with an organic solvent to permit the isolation of the essential oil. Nowhere does the '994 patent provide any basis for recycling the hydrophilic phase back to the extraction step, as presently claimed. Notably, the processing steps in the '994 patent are linear and sequential insofar as it is only

after the initial extraction step has been completed that the resulting (entire) extracted mixture is loaded on the hydrophobic adsorbent. Thus, at the time of contacting the mixture with the hydrophobic adsorbent, the initial extraction step has been completed. Employing the methodology of the '994 patent, subsequent recycling of the hydrophilic phase leaving the adsorption vessel back to the extraction step is completely unforeseen. Accordingly, Applicants submit that the idea of recycling the hydrophilic phase back to the extraction step would in no way have been considered, no less routine for the skilled artisan in this technical art. Moreover, contrary to what is stated by the Examiner, the '994 patent does not mention that conserving water is one of the advantages of its process. The Examiner's assertion that it would have been obvious to one of ordinary skill in the art to recycle the water used in the process finds no basis in the '994 patent.

The recycling step (iii), which characterizes the present invention, provides unexpected advantages. First, the recycling step conserves water insofar as this is the principal constituent of the hydrophilic phase which is returned to either the steam distillation vessel or the extraction vessel. Second, the hydrophilic phase is at a relatively high temperature (i.e. around 55-70°C, see claim 3). It is therefore highly energy efficient to recycle this phase back to the steam distillation vessel where this phase is used in the high temperature step (i). Without this essential advance, an alternative supply of water would have to be heated up to the steamed distillation temperature.

Moreover, a close reading of the '994 patent reveals that the reference is concerned with a plant component recovery device and focuses only on the isolation of an essential oil from an earlier formed aqueous mixture including an essential oil. The manner in which this mixture is obtained is not even relevant to the disclosure of the '994 patent. Instead, the '994 patent relates to what appears to be a complicated device for isolating the essential oil from an aqueous solution

containing it. The Examiner's attention is respectfully directed to the prior art discussion in paragraphs [0002]-[0005] of the '994 patent which focuses entirely on problems of prior art isolation devices and says nothing about the process as a whole starting from the plant material. This is further clear from paragraph [0021] where the process of the invention of the '994 patent is further described as commencing with the "treated water" corresponding to an aqueous solution including the essential oil. It is further mentioned that in paragraph [0024] that the "...steam distillation is performed using a common method...". Thus, the '994 patent explicitly teaches the skilled artisan to adopt a steam distillation technique that is found in the prior art, i.e. one in which the steam distillation step is completely separate from the essential oil isolation step. Accordingly, the '994 patent provides a clear teaching away from the claimed invention.

The secondary reference (Chromacek) fails to ameliorate the deficiencies of the primary reference. Notably, Chromecek contains no teaching, and certainly no motivation to recycle the hydrophilic phase and appears to be merely cumulative with the disclosure of the Japanese patent.

Accordingly, the rejection of claims 1-10 under 35 U.S.C. §103(a) is overcome and withdrawal thereof is respectfully requested.

Thus, in view of the foregoing remarks, the present application is in condition for allowance, which action is earnestly solicited.

Respectfully submitted,

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